

Bone Marrow Aspiration, Biopsy, and Culture in the Evaluation of HIV-Infected Patients for Invasive Mycobacteria and Histoplasma Infections

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Bone marrow (BM) aspiration and biopsy are used commonly in clinical practice to diagnose invasive tissue infections caused by *Mycobacterium avium intracellulare* (MAC), *Mycobacterium tuberculosis* (TB), and *Histoplasma capsulatum* (HC) in patients with HIV infection. However, the value of these invasive procedures relative to other diagnostic approaches has not been clearly defined. To determine the value of BM culture and BM histology in the diagnosis of opportunistic MAC/TB and HC infections in immunosuppressed patients with HIV, we retrospectively reviewed the records of 56 adult patients with HIV who underwent a single BM aspiration, biopsy, and culture because of unexplained fever and /or other clinical features suggestive of MAC/TB or HC infections. Thirty-two patients (57%) were ultimately diagnosed with MAC/TB or HC infection by positive cultures of BM, blood, sputum, or bronchoalveolar lavage fluid or by the histologic detection of organisms in biopsies of BM or other tissues. The diagnostic sensitivity of BM cultures was equal to that of blood cultures (20/32, or 63%). Granuloma and/or histologically apparent organisms were seen in BM biopsy specimens in 11 of 32 individuals (34%) ultimately

diagnosed with MAC/TB or HC infections. Among these 11 cases, both granuloma and acid-fast staining organisms were found in the BM biopsy specimens of 2 individuals for whom both BM and blood cultures were negative. Certain clinical symptoms and signs at the time of BM examination were found by logistic regression analysis to be significantly associated with a subsequent diagnosis of MAC/TB or HC infections; these included high fever, long duration of febrile days prior to BM examination, and elevated direct bilirubin in conclusion, while the diagnostic sensitivity of BM cultures was found to be no greater than that of blood cultures in detecting MAC/TB or HC infections in immunosuppressed HIV+ patients, histopathologic examination of BM specimens resulted in the relatively rapid identification of nearly one third of infected patients who underwent BM examination, and also identified infections in some patients who were culture negative. These findings support the continued use of BM aspiration, biopsy, and culture for the diagnosis of opportunistic MAC/TB or HC infections in immunosuppressed HIV+ patients, particularly when selected clinical features are present.

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Is Travel Distance a Barrier to Veterans' Use of VA Hospitals for Medical Surgical Care?

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Abstract: Lengthy travel distances may explain why relatively few veterans in the United States use VA hospitals for inpatient medical/surgical care. We used two approaches to distinguish the effect of distance on VA use from other factors such as access to alternatives and veterans' characteristics. The first approach describes how disparities in travel distance to the VA are related to other characteristics of geographic areas. The second approach involved a multivariate analysis of VA use in postal zip code areas (ZCAs). We used several sources of data to estimate the number of veterans who had priority access to the VA so that use rates could be estimated. Access to hospitals was characterized by estimated travel distance to inpatient providers that typically serve each ZCA. The results demonstrate that travel distance to the VA is variable, with veterans in rural areas traveling much farther for VA care than veterans in areas of high population density. However, Medicare recipients also travel farther in

areas of low population density. In some areas veterans must travel lengthy distances for VA care because VA hospitals which were built over the past few decades are not located close to areas in which veterans reside in the 1990s. The disparities in travel distance suggest inequitable access to the VA. Use of the VA decreases with increases in travel distance only up to about 15 miles, after which use is relatively insensitive to further increases in distance. The multivariate analyses indicate that those over 65 are less sensitive to distance than younger veterans, even though those over 65 are Medicare eligible and therefore have inexpensive access to alternatives. The results suggest that proximity to a VA hospital is only one of many factors determining VA use. Further research is indicated to develop an appropriate response to the needs of the small but apparently dedicated group of VA users who are traveling very long distances to obtain VA care.

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Short Term Health and Economic Benefits of Smoking Cessation: Low Birth Weight

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Abstract: *Objectives.* To estimate excess direct medical costs of low birthweight from maternal smoking and short-term cost savings from smoking cessation programs before or during the first trimester of pregnancy.

Methods: Simulations using data on neonatal costs per live birth. Outcome measures are mean U.S. excess direct medical cost per live birth, total excess direct medical cost, reductions in low birthweight and savings in medical costs from an annual one percentage point drop in smoking prevalence among pregnant women.

Results: Mean average excess direct

medical cost per live birth for each pregnant smoker (in 1995 dollars) was \$511; total cost was \$263 million. An annual drop of one percentage point in smoking prevalence would prevent 1300 low birth weight live births and save \$21 million in direct medical costs in the first year of the program; it would prevent 57,200 low birthweight infants and save \$572 million in direct medical costs in seven years.

Conclusions: Smoking cessation before the end of the first trimester produces significant cost savings from the prevention of low birthweight.

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